

**REMARKS**

Applicants have amended claims 1 and 2. Claims 1-5 are now pending.

In the pending Office Action, the Examiner objected to claim 2 as lacking proper antecedent basis; rejected claims 1 and 3-5 under 35 U.S.C. § 103(a) as being unpatentable over Bezama et al. (U.S. Patent No. 5,870,823) and Hennig et al. (U.S. Patent No. 6,898,222); and rejected claim 2 under 35 U.S.C. § 103(a) as being unpatentable over Bezama et al. and Hennig et al. in view of Calaman et al. (U.S. Patent No. 6,397,932).

Applicants traverse the objection and rejections, at least for the following reasons.

Applicants have amended the specification, Fig. 5 of the drawing, and claims 1 and 2, to clarify certain technical points. By the amendment of claim 1, for example, Applicants are clarifying that electric current supplied by the supply means is supplied to the semiconductor light emitting element through the conductive portion of the heat sink having the cooling water passage. Applicants submit that this modified language finds support in the original specification - see, for example, the specification at page 9, lines 1-5, and at page 11, lines 19-24. Applicants respectfully request favorable consideration of these changes.

Applicants have amended claim 2 in view of the Examiner's objection in the pending Office Action. Accordingly, reconsideration and withdrawal of the objection to claim 2 are respectfully requested.

Applicants traverse the art rejections applied to claims 1-5 for a number of reasons. First of all, the applied Hennig et al. reference is not prior art against the instant application. Secondly, even if Hennig et al. is considered to be a prior art reference, the current claims patentably distinguish over the art combinations asserted by the Examiner in the pending Office Action.

As to the first point, the Priority Date and International Filing Date for the instant application are March 6, 2002 and March 6, 2003, respectively. The Hennig et al. reference, in comparison, has an issue date of May 24, 2005. Thus, if the Hennig et al. patent is prior art against the instant application, it can only be so under 35 U.S.C. 102(e).

Under the current version of 35 U.S.C. 102(e), if a U.S. patent - such as the applied Hennig et al. patent - issues from, or claims the benefit of, an international (PCT) application, the filing date of the international application will be considered as having the effect of a U.S. filing date for § 102(e)(2) purposes if the following three conditions were met: (1) the international application was filed on or after November 29, 2000, which is the effective date of the relevant provisions of the AIPA and HR 2215; (2) the international application designated the U.S.; and (3) the international application PCT publication (by WIPO) was in the English language. Accordingly, if all three of these conditions are met, a U.S. patent can be applied as a prior art reference as of the filing date of the international application.

However, not all three of these conditions are met in the case of the applied Henning patent. Specifically, it is Applicants understanding that the international application PCT publication (by WIPO) for Hennig et al. was in the German language, rather than English. In support of this understanding, Applicants submit herewith a copy of PCT Publication No. WO 02/47224 A2, published in German, which corresponds to International Application No. PCT/DE01/04398 from which the applied Hennig et al. patent issued.

In view of the foregoing, Applicants submit that the applied Hennig et al. patent is not prior art against the instant application under 35 U.S.C. 102(e) or any other sub-section of 35 U.S.C. 102. Accordingly, since Hennig et al. forms a part of each art rejection applied in the

pending Office Action, reconsideration and withdrawal of the rejections applied to claims 1-5 are respectfully requested.

As to the second basis for asserting that the art rejections applied to claims 1-5 should be withdrawn, Applicants submit that the applied references, whether taken alone or in combination, do not disclose or suggest any of Applicants' claimed combinations wherein the electric current from the supply means is supplied to the semiconductor light emitting element through the conductive portion of the heat sink.

In Bezama et al., for example, a semiconductor device 28 is placed on a ceramic body 12. A cooling channel (cooling water passage) 32 is provided in the ceramic body 12. However, in the aforementioned structure, the cooling water passage does not include a conductive portion. Moreover, the electric current for the semiconductor device is not supplied through the heat sink. The secondary references applied against claims 1-5 do not make up for the deficiencies in Bezama et al. In Hennig et al., for example, diode lasers 1 are placed on a common cooling element 6 with heat-spreading carriers 3. The carriers 3, in turn, are fastened to a cooling surface 5 of the common cooling element 6 so as to be electrically insulated - see column 5, lines 4-7 of Hennig et al. Accordingly, in the Hennig et al. structure, the electric current for the diode laser is not supplied through the heat sink having a cooling water passage.

Thus, Applicants submit that even if the applied references were to be combined in the manner suggested by the Examiner in the pending Office Action, the resulting combination would still not include all of the elements recited in claim 1 of the instant application. Accordingly, reconsideration and withdrawal of the rejections applied to independent claim 1 and its dependent claims 2-5 are respectfully requested.

For at least the foregoing reasons, reconsideration and withdrawal of the objection and rejections set forth in the pending Office Action are respectfully requested.

### **CONCLUSION**

In view of the foregoing, Applicants submits that the pending claims are in condition for allowance, and respectfully requests withdrawal of all outstanding objections and rejections, and the timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicants' undersigned representative to expedite prosecution. A favorable action is awaited.

**EXCEPT** for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. § 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0573. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,



John G. Smith, Reg. No. 33,818

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**Customer No. 055694**  
**DRINKER BIDDLE & REATH LLP**  
1500 K Street, N.W., Suite 1100  
Washington, DC 20005-1209  
Tel.: (202) 842-8800  
Fax: (202) 842-8465

**AMENDMENTS TO THE DRAWINGS:**

The attached sheet of drawings includes changes to Fig. 5 to change the units for the conductivity of water to be 45  $\mu\text{S}/\text{cm}$ . This sheet replaces the original sheet.

Attachment: Replacement Sheet  
Annotated Sheet Showing Changes